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Translation of Annex to the IPER

Claims

- 10 1. A permanent-magnetically excited electric machine comprising a stator part (2) and a moving part (30) movable relative to the stator part (2), as well as an air gap (8) between the stator part (2) and the moving part (30), with one of said stator part (2) and said moving part (30) having a flux path assembly for magnetic flux and winding coils (6) and the other one of said
- 15 stator part (2) and said moving part (30) having a flux path assembly for magnetic flux and permanent magnets (36), and in which in the region of the flux path assembly of the stator part (2) and/or of the moving part (30), there is provided at least one filling space (12; 16; 20; 38; 46; 48; 50) for receiving flux conduction liquid (18) that is
- 20 conductive for magnetic flux, characterized in that, for changing the magnetic flux conductivity of the flux path assembly, the quantity of the flux conduction liquid (18) in the filling space (12; 16; 20; 38; 46; 48; 50) may be changed during operation of the machine in dependency on the rotational speed of the machine.
- 25 2. A machine according to claim 1, characterized in that supplying of more or less flux conduction liquid (18) to the filling space comprises the utilization of a number of discrete filling states of the filling space, preferably at least the filling state "full" and the
- 30 filling state "empty".
3. A machine according to claim 1, characterized in that supplying of more or less flux conduction liquid (18) to the filling space comprises the utilization of a continuous range of filling

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- 35 states of the filling space, preferably inclusive of the final filling state "full"
and the final filling state "empty".
4. A machine according to any of claims 1 to 3,
characterized in that the flux path assembly provided with winding coils (6)
40 is provided with interruptions (12) of the flux path assembly that serve as
filling spaces.
5. A machine according to any of claims 1 to 4,
characterized in that the flux path assembly provided with winding coils (6)
45 is provided with local recesses (20) of the magnetic flux cross-sectional
area that serve as filling spaces.
6. A machine according to any of claims 1 to 5,
characterized in that the flux path assembly provided with winding coils (6)
50 is provided with an under-dimensioned solid-material flux path assembly
and at least one filling space for large-area up-dimensioning of the flux
path assembly.
7. A machine according to any of claims 1 to 6,
55 characterized in that the flux path assembly provided with permanent
magnets (36) is provided with interruptions of the flux path assembly that
serve as filling spaces.
8. A machine according to claim 7,
60 characterized in that circumferentially magnetized permanent magnets (36)
and flux conduction elements (40) are provided between two adjacent
permanent magnets (36) each; and that distance spaces (46) between
permanent magnets (36) and flux conduction elements (40) are provided as
filling spaces.
- 65 9. A machine according to any of claims 1 to 8,

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characterized in that the flux path assembly provided with permanent magnets (36) is provided with local recesses of the magnetic flux cross-sectional area that serve as filling spaces.

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10. A machine according to any of claims 1 to 9,
characterized in that the flux path assembly provided with permanent magnets (36) is provided with an under-dimension solid-material flux path assembly (32) and at least one filling space (38) for large-area up-dimensioning of the flux path assembly.

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11. A machine according to any of claims 1 to 6,
characterized in that circumferentially magnetized permanent magnets (36) and flux conduction elements (40) are provided between two adjacent permanent magnets (36) each; and that on the side of the permanent magnets (36) and the flux conduction elements (40) directed away from the air gap, there is provided at least one filling space for optionally providing a magnetic shunt.

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12. A machine according to any of claims 1 to 11,
characterized in that the filling space is connected to a circuit of the flux conduction liquid (18).

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13. A machine according to any of claims 1 to 12,
characterized in that the moving part (30) has at least one filling space; and that a pump for conveying the flux conduction liquid (18) is arranged on the moving part (30).

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14. A machine according to any of claims 1 to 12,
characterized in that the moving part (30) has at least one filling space; and that a pump for conveying the flux conduction liquid (18) is arranged separately from the moving part and is connected to the filling space via at least one passageway permitting relative movement.

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15. A machine according to any of claims 1 to 14,

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characterized in that the filling space and the flux conduction liquid (18) at the same time are constituent part of a cooling system of the machine.